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EXAMINER	
DO, ANH HONG	
ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/996,967	Suggs
Examiner	**Art Unit**
Anh Hong Do	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later then three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-114 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) 1-40 is/are allowed.

6) ☒ Claim(s) 41-46, 52, 53, 56-61, 67-71, 76-82, 89, 94, 96, 101, 106, 108, and 113 is/are rejected.

7) ☒ Claim(s) 47-51, 54, 55, 62-66, 72-75, 83-88, 90-93, 95, 97-100, 102-105, 107, 109-112 and 114 is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 106 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This claim is a duplicate of claim 94.

Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 41-46, 52, 53, 56-61, 67-71, 76-82, 89, 94, 96, 101, 106, 108, and 113 are rejected under 35 U.S.C. 102(b) as being anticipated by Eberhard et al. (U.S. Patent No. 5,355,309).

Regarding claim 41, Eberhard discloses:

- at least one first photosensor segment having a plurality of first photosensitive elements for scanning at a first resolution (Fig. 1: at least one detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution);

- at least one second photosensor segment having a plurality of rows, each one of the plurality of rows having a plurality of second photosensitive elements for scanning at a second resolution, the at least one second photosensor segment adjacent to the at least one first photosensor segment (Fig. 1: at least one detector element segment 14D having a plurality of rows, each one of the plurality of rows having plurality of detector elements 14D for scanning at fine resolution, wherein the at least one second photosensor segment 14D adjacent to the at least one first photosensor segment 12D);

- wherein the plurality of second photosensitive elements has a higher density than the plurality of first photosensitive elements so that an image is scanned at a higher resolution with the plurality of second photosensitive elements than with the plurality of first photosensitive elements (col. 5, lines 1-8, teaches the plurality of second photosensitive elements 14D has a higher density df than the plurality of first photosensitive elements 12D (dc) so that an image is scanned at a higher resolution (i.e., fine resolution) with the plurality of second photosensitive elements 14D than with the plurality of first photosensitive elements 12D).

Regarding claim 42, Eberhard teaches each of the plurality of first photosensitive elements is substantially a first size and each of the plurality of first photosensitive elements is substantially a second size, wherein the first size being larger than the second size (col. 5, lines 8-10, teaches

each of the plurality of first photosensitive elements 12D is substantially a first size and each of the plurality of first photosensitive elements 14D is substantially a second size, wherein the second size being smaller than the first size).

Regarding claims 43 and 46, Eberhard teaches scanning an image across the at least first and second photosensor segments (col. 6, lines 58-66).

Regarding claim 44, Eberhard teaches memory 46M of computer station 46 for storing the image in its portions (Fig. 8).

Regarding claim 45, Eberhard teaches memory 44M of controller 44 for selecting photosensor segment (i.e., the scanning path) (Fig. 8).

Regarding claim 52, Eberhard teaches:

- a plurality of first sensor segments aligned linearly, the plurality of first photosensor segments having a first length, the first length equal to width of a first image to be scanned at the first resolution (Fig. 1: 12D; and col. 5, lines 25-31);

- a plurality of second sensor segments aligned linearly, the plurality of second photosensor segments having a second length, the second length equal to width of a second image to be scanned at the second resolution (Fig. 1: 14D; and col. 5, lines 35-39).

Regarding claim 53, Eberhard teaches the first length and the second length are substantially equivalent (col. 5, lines 25-42).

Regarding claim 56, Eberhard discloses:

- at least one first photosensor segment having a plurality of first photosensitive elements for scanning at a first resolution (Fig. 1: at least one detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution), and the at least one first photosensor segment having a first length (col. 5, lines 25-31);

- at least one second photosensor segment having a plurality of second photosensitive elements for scanning at a second resolution (Fig. 1: at least one detector element segment 14D having a plurality of detector elements 14D for scanning at fine resolution), and the at least one second photosensor segment having a second length, the second length less than the first length (col. 5, lines 25-42);

- wherein the plurality of second photosensitive elements has a higher density than the plurality of first photosensitive elements so that an image is scanned at a higher resolution with the plurality of second photosensitive elements than with the plurality of first photosensitive elements (col. 5, lines 1-8, teaches the plurality of second photosensitive elements 14D has a higher density df than the plurality of first photosensitive elements 12D (dc) so that an image is scanned at a higher resolution (i.e., fine resolution) with the plurality of second photosensitive elements 14D than with the plurality of first photosensitive elements 12D).

Regarding claim 57, Eberhard teaches the first length corresponds to width of a first image to be scanned at the first resolution (Fig. 1: 12D; and col. 5, lines 25-31), and the second length corresponds to width of a second image to be scanned at the second resolution (Fig. 1: 14D; and col. 5, lines 35-39).

Regarding claim 58, Eberhard teaches each of the plurality of first photosensitive elements is substantially a first size and each of the plurality of first photosensitive elements is substantially a second size, wherein the first size being larger than the second size (col. 5, lines 8-10, teaches each of the plurality of first photosensitive elements 12D is substantially a first size and each of the plurality of first photosensitive elements 14D is substantially a second size, wherein the second size being smaller than the first size).

Regarding claim 59, Eberhard teaches scanning an image across the at least first and second photosensor segments (col. 6, lines 58-66).

Regarding claim 60, Eberhard teaches memory 46M of computer station 46 for storing the image in its portions (Fig. 8).

Regarding claim 61, Eberhard teaches memory 44M of controller 44 for selecting photosensor segment (i.e., the scanning path) (Fig. 8).

Regarding claim 67, Eberhard discloses:

- at least one first photosensor segment having a plurality of first photosensitive elements for scanning a scanline at a first resolution (Fig. 1: at least one detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution), and each one of the first photosensitive elements having a first width along the scanline (col. 5, lines 25-31);

- at least one second photosensor segment having a plurality of second photosensitive elements for scanning the scanline at a second resolution (Fig. 1: at least one detector element segment 14D having a plurality of detector elements 14D for scanning at fine resolution), and

each one of the second photosensitive elements having a second width, the second width less than the first width (col. 5, lines 25-42), so that an image is scanned at a higher resolution with the plurality of second photosensitive elements than with the plurality of first photosensitive elements (col. 5, lines 1-8, teaches the plurality of second photosensitive elements 14D has a higher density df than the plurality of first photosensitive elements 12D (dc) so that an image is scanned at a higher resolution (i.e., fine resolution) with the plurality of second photosensitive elements 14D than with the plurality of first photosensitive elements 12D).

Regarding claims 68 and 71, Eberhard teaches scanning an image across the at least first and second photosensor segments (col. 6, lines 58-66).

Regarding claim 69, Eberhard teaches memory 46M of computer station 46 for storing the image in its portions (Fig. 8).

Regarding claim 70, Eberhard teaches memory 44M of controller 44 for selecting photosensor segment (i.e., the scanning path) (Fig. 8).

Regarding claim 76, Eberhard discloses:

- at least one first photosensor segment having a first length and having a first number of first photosensitive elements for scanning at a first resolution (Fig. 1: at least one detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution; and col. 5, lines 25-31, teaches the first length and the first number of first detector elements);

- at least one second photosensor segment having a second length and having a second number of second photosensitive elements for scanning at a second resolution (Fig. 1: at least one

detector element segment 14D having a plurality of detector elements 14D for scanning at fine resolution; and col. 5, lines 25-42, teaches the second length and the second number of second photosensitive elements), wherein the second number of second photosensitive elements is greater than the first number of first photosensitive elements (col. 5, lines 25-42), so that an image is scanned at a higher resolution with the plurality of second photosensitive elements than with the plurality of first photosensitive elements (col. 5, lines 1-8, teaches the plurality of second photosensitive elements 14D has a higher density df than the plurality of first photosensitive elements 12D (dc) so that an image is scanned at a higher resolution (i.e., fine resolution) with the plurality of second photosensitive elements 14D than with the plurality of first photosensitive elements 12D).

Regarding claim 77, Eberhard teaches the first length and the second length are substantially the same (col. 5, lines 25-42).

Regarding claim 78, Eberhard teaches the second length is less than the first second length (col. 5, lines 25-42).

Regarding claims 79 and 82, Eberhard teaches scanning an image across the at least first and second photosensor segments (col. 6, lines 58-66).

Regarding claim 80, Eberhard teaches memory 46M of computer station 46 for storing the image in its portions (Fig. 8).

Regarding claim 81, Eberhard teaches memory 44M of controller 44 for selecting photosensor segment (i.e., the scanning path) (Fig. 8).

Regarding claims 89 and 96, since these method claims each corresponds to apparatus claim 56, the discussion of claim 56 applies hereto.

Regarding claims 94 and 106, Eberhard discloses:

- providing a first photosensor segment having a plurality of first photosensitive elements for scanning at a first resolution (Fig. 1: detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution);

- providing a second photosensor segment adjacent to the first photosensor segment, the second photosensor segment having a plurality of second photosensitive elements arranged in at least two rows for scanning at a second resolution (Fig. 1: detector element segment 14D having a plurality of rows, each one of the plurality of rows having plurality of detector elements 14D for scanning at fine resolution, wherein the at least one second photosensor segment 14D adjacent to the at least one first photosensor segment 12D);

- concurrently scanning an image across the first photosensor segment and across the second photosensor segment (col. 6, lines 58-66);

- combining data corresponding to the image scanned from the first photosensor segment and data corresponding to the image scanned from the second photosensor segment such that a pixel area is increased to provide improved image quality (col. 5, lines 42-53).

Regarding claim 101, Eberhard discloses:

- providing a first photosensor segment having a plurality of first photosensitive elements and having a first pixel density for scanning at a first resolution (Fig. 1: detector element segment

12D having a plurality of detector elements 12D and having a first pixel density dc for scanning at coarse resolution);

- providing a second photosensor segment adjacent to the first photosensor segment, the second photosensor segment having a plurality of second photosensitive elements arranged in at least two rows and having a second pixel density for scanning at a second resolution (Fig. 1: detector element segment 14D having a plurality of rows, each one of the plurality of rows having plurality of detector elements 14D and having a second pixel density df for scanning at fine resolution, wherein the at least one second photosensor segment 14D adjacent to the at least one first photosensor segment 12D); wherein the plurality of second photosensitive elements has a higher density than the plurality of first photosensitive elements (col. 5, lines 1-8, teaches the plurality of second photosensitive elements 14D has a higher density df than the plurality of first photosensitive elements 12D (dc) so that an image is scanned at a higher resolution (i.e., fine resolution) with the plurality of second photosensitive elements 14D than with the plurality of first photosensitive elements 12D).

- scanning an image across the first photosensor segment at a first resolution (col. 5, lines 1-8);

- scanning an image across the second photosensor segment at a second resolution (col. 5, lines 1-8).

Regarding claim 108, Eberhard discloses:

- providing a first photosensor segment having a first number of first photosensitive elements for scanning at a first resolution (Fig. 1: detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution; and col. 5, lines 25-31, teaches the first number of first detector elements);

- providing a second photosensor segment adjacent to the first photosensor segment, the second photosensor segment having a second number of second photosensitive elements for scanning at a second resolution (Fig. 1: detector element segment 14D having a plurality of detector elements 14D for scanning at fine resolution, wherein the second photosensor segment 14D adjacent to the first photosensor segment 12D; and col. 5, lines 25-42, teaches the second number of second photosensitive elements), wherein the second number of second photosensitive elements is greater than the first number of first photosensitive elements (col. 5, lines 25-42).

Regarding claim 113, Eberhard discloses:

- providing a first photosensor segment having a plurality of first photosensitive elements for scanning at a first resolution and having a first pixel area (Fig. 1: detector element segment 12D having a plurality of detector elements 12D for scanning at coarse resolution, and having a first pixel area 12);

- providing a second photosensor segment adjacent to the first photosensor segment, the second photosensor segment having a plurality of second photosensitive elements arranged in at least two rows for scanning at a second resolution and having a second pixel area (Fig. 1: detector element segment 14D having a plurality of rows, each one of the plurality of rows having plurality

of detector elements 14D for scanning at fine resolution, wherein the at least one second photosensor segment 14D adjacent to the at least one first photosensor segment 12D, and having a second pixel area 14);

- concurrently scanning an image across the first photosensor segment and across the second photosensor segment (col. 6, lines 58-66);

- combining data corresponding to the image scanned from the first photosensor segment and data corresponding to the image scanned from the second photosensor segment such that a pixel area is increased to provide improved image quality (col. 5, lines 42-53).

Allowable Subject Matter

5. Claims 1-40 are allowed.

6. Claims 47-51, 54, 55, 62-66, 72-75, 83-88, 90-93, 95, 97-100, 102-105, 107, 109-112 and 114 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The present invention provides a multiple resolution sensing apparatus comprising a geometric layout and use of a photosensor array constructed to be able to yield multiple

resolution resulting images from different sized original images (specification, col. 1, lines 47-50), wherein the photosensor array is relatively inexpensive and easy to manufacture, and the resulting device is also relatively compact and can be used in color contact-type image sensing applications (specification, col. 1, line 66 - col. 2, line 4). Particularly, the following claimed subject matters are not taught by the prior art, taken either singly or in combination:

- density of photosensitive elements within the second photosensor segment is greater than density of photosensitive elements within the first photosensor segment; using some photosensors for multiple resolutions while other photosensors are used for only one resolution (see independent claim 1);

- scanning different portions of the same image within photosensor segments having different densities of photosensitive elements; scanning is done using the second plurality of photosensitive elements within the second photosensor but not using the first plurality of photosensitive elements within the first photosensor segment, wherein the second resolution is greater than the first resolution (see independent claim 10);

- automatically selecting resulting image resolution based on an original image, wherein: when the original image has a width within a first predetermined range, selecting a first resolution; when the original image has a width within a second predetermined range, selecting a second resolution; when the first resolution is selected, scanning the original image at the first resolution; and when the second resolution is selected, scanning the original image at the second resolution (see independent claim 20);

- at least one third photosensor segment having a plurality of third photosensitive elements for scanning at a third resolution, the at least one third photosensor segment adjacent to the at least one second photosensor segment, wherein the plurality of third photosensitive elements has a higher density than the plurality of second photosensitive elements so that the image is scanned at the higher resolution with the plurality of third photosensitive elements than with the plurality of second photosensitive elements (see dependent claim 47)

- at least one third photosensor segment having a plurality of third photosensitive elements for scanning at a third resolution, the at least one third photosensor segment having a third length, the third length less than the second length (see dependent claim 62);

- a plurality of third sensor segments aligned linearly and adjacent to the second photosensor segment, the plurality of third photosensor segments having a plurality of third photosensitive elements for scanning at a third resolution, the plurality of third photosensor having a third length at least equal to width of a third image to be scanned at the third resolution (see depedent claim 54);

- means for scanning an image so that the image is first scanned across the at least one first photosensor segment, and then scanned across the at least one second photosensor segment, and then scanned across the at least one third photosensor segment in succession along a scanning path (see depedent claim 64);

- at least one third photosensor segment having a third length and having a third number of third photosensitive elements for scanning at a third resolution, wherein the third number of third

photosensitive elements is greater than the second number of second photosensitive elements so that the image is scanned at the higher resolution with the plurality of third photosensitive elements than with the plurality of second photosensitive elements (see depedent claim 83);

- providing a third photosensor segment, adjacent to the second photosensor segment, the third photosensor segment having a plurality of third photosensitive elements; concurrently scanning the image across the first photosensor segment, the second photosensor segment, and the third photosensor segment; and combining data corresponding to the image scanned from the first photosensor segment, data corresponding to the image scanned from the second photosensor segment and data corresponding to the image scanned from the third photosensor segment such that a pixel area is increased to provide improved image quality (see dependent claims 95, 107 and 114);

- processing data corresponding to the image from the second photosensor segment so that the image is magnified by an amount corresponding to the second resolution (see dependent claims 90, 97, 102 and 109).

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Hong Do whose telephone number is (703) 308-6720.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700 or 4750. The fax phone number for this Group is (703) 872-9314.

November 12, 2002.